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OPTI-Logic XL-Series Laser Rangefinder Manual

Operating Instructions for Models 120XL, 400XL, 600XL, and 800XL

The Opti-Logic XL-Series Laser Rangefinder is an easy-to-use, electronic instrument designed for hunting, utilities, construction, and many other distance measurement applications. The XL-Series Laser Rangefinder allows rapid, accurate determination of distance to an object in a matter of seconds using one button operation and "Red-Dot" technology for easy sighting. The Opti-Logic Laser Rangefinder is one of the lightest, most compact devices of its kind. This product is designed for years of trouble-free operation and is proudly made in the USA.

1.0 Product Description and Features

Viewfinder:	Look through the viewfinder window and aim the Red Dot at an object.
Range Button:	Push the "Range" button to select modes or to activate the Red Dot; Release to take distance measurements.
Display:	The Opti-Logic 120XL rangefinders are factory programmed in either feet (FT), meters (M), or yards (Yd). All other models are User Programmable to read in either Ft, M, or Yd.
Speaker Icon:	The speaker icon indicates that the speaker is activated to produce a tone after each measurement.
Low Battery:	Replace the battery when the Low Battery symbol is displayed constantly.
Automatic Timeout:	To save batteries, the instrument will automatically power down after about 7 seconds.

2.0 Basic Operation

A. **Hold the instrument an inch or two from your eye** and aim at the object through the viewfinder.
B. **Press and hold the "Range" button**. A "Red Dot" will appear in the viewfinder. Place the "Red Dot" on the target.
C. **Release the button and maintain aim on the target momentarily**. The "clicking" sounds indicate that the laser is hitting the target. Like a Geiger counter, stronger signals produce more rapid clicking. The laser does not fire until the button is RELEASED.
D. **Read the distance** after the audible tone is heard. (In "stealth mode" there will be no clicking and the distance silently displays after the "Red Dot" goes out).

2.1 Distance Measuring with Time-of-Flight Rangefinders

The Opti-Logic XL-Series Laser Rangefinder emits invisible, eye safe, pulses of infrared light. Distances are determined by reflecting the laser beam off an object and measuring the round-trip time-of-flight of the laser beam to and from the object. The laser beam emitted by the Rangefinder is in the form of a vertical stripe of invisible light, which enhances the Rangefinder's ability to hit thin vertical targets. When aiming at horizontal surfaces or terrain, the range and accuracy of the instrument can be increased by turning the instrument on its side, in the same fashion that you would rotate a camera to change from a landscape to portrait format.

The XL-Series Laser Rangefinder incorporates a unique "Lock and Load" feature that simplifies the task of hitting targets in the presence of background objects. Simply depress the "Range" button and aim the Rangefinder using the "Red Dot" aiming aid in the viewfinder. The laser is fired **AFTER** the button is released, which provides time to properly aim the Rangefinder and minimizes the chance of hitting unintended objects. When the Rangefinder laser beam hits a target, a clicking sound is produced to provide audible feedback to make it easier to acquire your target. The rate of clicking is faster for brighter, closer objects, much like a Geiger counter. To improve the accuracy of the

instrument, an onboard computer averages several readings from the object. After the Rangefinder has received enough information, the audible clicking and Red Dot turn off and the distance is shown in the display on the rear panel of the instrument. If the speaker is turned on, a tone or "beep" will sound when the distance is displayed.

The maximum distance measurable by any laser rangefinder is determined by several factors including the size, shape, reflectivity, and orientation of the object as well as atmospheric conditions. Color and surface finish of the target also affect the reflectivity and therefore can influence the range as well. A good quality target is a non-gloss object that is light in color and has enough surface area for the laser beam to efficiently reflect back to the Rangefinder. Vertical objects tend to make better targets than horizontal ones. White objects tend to range farther than black objects. Target surfaces that are perpendicular to the laser beam are better than surfaces tilted away from the Rangefinder. Targets made of "retro-reflectors" provide the greatest range capability. Retro-reflectors are made of special materials designed to reflect light back toward the light source, for example, stop signs, street signs, license plates, and specially made Opti-Logic reflectors. Contrary to expectation, extremely glossy surfaces like windows and mirrors do not make good targets, because they tend to reflect light away from the instrument.

2.2 Changing the 9-Volt Battery

A. Slide the locking tab on the side of the instrument forward (toward the lenses).
B. Using your thumbnail, gently pry out the battery door using the locking tab.
C. Pull on the cloth ribbon and the battery will pop out.
D. Replace battery. The battery direction is shown in the battery compartment. Replace and lock battery door using slide lock.

2.3 Mode Selection

The 400XL, 600XL, and 800XL rangefinders allow the user to select the display units and speaker ON/OFF. To enable the mode selection process, hold the firing button down for approximately 10-12 seconds until a beep is heard. Immediately release the button. Repeatedly press and release the button to scroll through different menu options:

Feet – Speaker OFF
Feet – Speaker ON
Yards – Speaker OFF
Yards – Speaker ON
Meters – Speaker OFF
Meters – Speaker ON

About 5 seconds after the desired menu option is selected, the instrument will beep three times and return to operational mode.

3.0 General Care

The Opti-Logic Laser Rangefinder is a sophisticated electronic and optical instrument, built to withstand a reasonable amount of handling with the same amount of care as any other optical or electronic device, such as a camera, binoculars, riflescope, telescope, etc. Keeping the lens clean will insure optimum operation and performance. Use a soft, clean non-abrasive cloth to clean the lenses. Cotton swabs work well. Never use paper or other abrasive materials. Dampen a cloth with either a very mild soap solution or clean water. Gently rub the lenses with a dampened cloth. **DO NOT SCRUB THE LENSES.** After cleaning the lenses, gently wipe the lenses off with a soft dry cloth. **NEVER** use petroleum products or chemicals to clean the lenses or any parts. Use the same procedure to clean the exterior. Although the Opti-Logic XL-Series Laser Rangefinder has been designed to withstand normal outdoor use, some common sense precautions should be observed. **NEVER** subject your laser

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rangefinder to shock, high temperature, or harmful chemicals or gases. If the Rangefinder is not going to be used for long periods of time, remove the battery and store in a cool, dry place. **DO NOT** use chemicals or solvents to clean the Rangefinder. Chemicals, insect repellents and solvents can damage the plastic housing and lenses of the Rangefinder.

4.0 Low Battery Indicator

When the battery voltage becomes too low, the instrument may act erratically or cease to function. The low battery indicator will appear in the display before this occurs. The battery should be replaced as soon as possible after the indicator is displayed.

5.0 Error Messages

When a new battery is installed in the XL-Series Laser Rangefinder, diagnostic checks are performed by the onboard computer. These tests check the basic operation of the Rangefinder. During the normal diagnostic test the display cycles from "000" - "999" and shows all of the LCD display elements. If a potential problem exists, an error message "E01" or "E02" is displayed. If this occurs, of if you suspect a problem with the Rangefinder:

A. Remove the battery for several minutes and then reinstall (it may be necessary to quickly short the internal battery terminals for 1 second).
B. Make sure the battery terminals are in contact with the internal metal battery clips.
C. Check battery voltage or try a new battery.

Note 1: If the Rangefinder displays an incorrect distance, make sure that the "Red Dot" in the viewfinder is hitting the object. Try aiming the Rangefinder at a nearby reflective target such as a street sign or automobile license plate to verify alignment.

Note 2: If the Rangefinder shows a distance of "0", the Rangefinder is hitting an object at a distance that is less than the minimum distance. Try aiming the Rangefinder at a more distant object to verify operation.

6.0 Technical Support and Maintenance

For questions regarding the Opti-Logic Laser Rangefinder or if problems persist, make a note of the instrument serial number and date of manufacture and call Opti-Logic Customer Service at 888-678-4564, 8am to 5pm Monday thru Friday Central Time. If your rangefinder requires maintenance, your Customer Service Representative will assign you a Return Merchandise Authorization Number (RMA) and provide instructions for returning the instrument for repair. When returning merchandise for maintenance or repair, please be sure to include a brief written description of the problem to:

US Mail:	**Opti-Logic Corporation** **P.O. Box 2002** **Tullahoma, TN 37388**	**Commercial Carrier:**	**Opti-Logic Corporation** **201 Montclair Street** **Tullahoma, TN 37388**

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6.1 Warranty

Your Opti-Logic Laser Rangefinder is warranted to be free of defects for a period of one year after the date of purchase. This warranty does not cover defects caused by misuse or improper handling, installation or maintenance of the product. In the event of a defect under this warranty we will, at our option, repair or replace the product, provided that you return the product postage prepaid to your authorized Opti-Logic Technical Service Center including a check in the amount of $15.00 to help cover the cost of handling. (This fee is waived if you discover a defect within the first 30 days after purchase.) Non-warranty repairs will be made at a cost of $25.00 plus the cost of any plastic replacement parts.

7.0 Specifications

Model Number:	120XL, 400XL, 600XL and 800XL
Approx. Size:	1.7" x 4" x 5.1"
Weight:	9.7 oz
Operational Range:	120XT 5-150 yards passive, up to 500 yards reflective 400XT 5-400 yards passive, up to 999 yards reflective 600XT 5-600 yards passive, up to 999 yards reflective 800XT 5-800 yards passive, up to 999 yards reflective
Resolution:	1 foot
Range Accuracy:	+/- 1 yard (+/- 2 yards for very dark or very bright targets).
Readout:	Easy to read external LCD display.
Units of Measure:	120XL is Factory Programmed in feet, meters, or yards. All other models are User Programmable in either feet, meters, or yards.
Viewfinder:	Monocular viewing port. Red LED aiming sight, +/- 0.1 degrees
Battery:	Single 9 volt battery. Operates for approximately 1000 shots.
Operational Temperature:	0° - 40°C, 32°-104°F. Relative Humidity 5-95% non-condensing.
Laser Type:	Infrared Class 1, eye safe 905nm Laser.